



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,689	11/08/2002	Jiang Hsieh	128402	2327

23465 7590 02/14/2006  
JOHN S. BEULICK  
C/O ARMSTRONG TEASDALE, LLP  
ONE METROPOLITAN SQUARE  
SUITE 2600  
ST LOUIS, MO 63102-2740

EXAMINER
----------

ROY, BAISAKHI

ART UNIT	PAPER NUMBER
----------	--------------

3737

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/065,689

Applicant(s)

HSIEH ET AL.

Examiner

Baisakhi Roy

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 11/15/05 have been fully considered but they are not persuasive. The system described in Paulus et al. is directed to a multi-energy computed tomography system as stated in (col. 2 lines 29-33), with the system being able to extend the state of the art in multi energy computed tomography and therefore configured to be responsive to different x-ray spectra, where multiple images are acquired over a range of energies with multi-spectral analysis (col. 5 lines 57-65). Therefore previous rejection still stands.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Art Unit: 3737

2. Claims 1, 14-17, 21, 22, and 27-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Paulus et al. (6399951). Paulus et al. disclose a method for obtaining data of brain tissue with a Multi-Energy Computed Tomography (MECT) system including an x-ray source rotatable about the patient (abstract, col. 2 lines 32-40, col. 5 lines 5-8), comprising a radiation source, a radiation detector, and a computer configured to receive data and generate a location of a labeled drug or a tagging ligand based upon the received data and distribution of the drug in the subject (abstract, col. 2 lines 37-39, col. 3 lines 40-64, col. 4 lines 17-27, col. 6 lines 6-11). Paulus et al. further teach said system being able to distinguish between bones and soft tissue and capable of detecting fractures of the head (col. 4 lines 66-67, col. 5 lines 5-9).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 6, 18-20, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paulus et al. in view of Carroll et al. Paulus et al. do not explicitly teach the limitations of claims 3, 6, 18-21, 30, and 31. In the same field of endeavor, Carroll et al. teach a CT based system for computing the blood flow (col. 4 lines 16-20), performing a Compton and photoelectric decomposition of the data (col. 6 lines 52-67), acquire data regarding a targeting agent of a tumor, and classifying tissue as cancerous or non-cancerous (col. 11 lines 8-25). It would have therefore been obvious to one of

Art Unit: 3737

ordinary skill in the art to use the teaching by Carroll et al. to modify the teaching by Paulus et al. for the purpose of accurately determining head abnormalities.

5. Claims 7-12 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paulus et al. in view of Fessler. Paulus et al. do not explicitly teach performing a Basis Material Decomposition (BMD) of the acquired data. In the same field of endeavor, Fessler discloses a multi-energy CT system to acquire data, perform a Basis Material Decomposition (BMD) of the acquired data, provide improved CT number accuracy, and facilitate reduction in image artifacts (abstract, col. 3 lines 58-64, col. 4 lines 26-30, col. 7 lines 15-20 lines 66-67, col. 8 lines 1-44, col. 28 lines 13-15). It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Fessler to modify the teaching by Paulus et al. for the purpose of reducing image artifacts and improving image contrast.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paulus et al. in view of Leuchter et al. Paulus et al. do not explicitly teach monitoring or diagnosing lesions related to Alzheimer's and other neurological disorders. Leuchter et al. disclose a method and apparatus of obtaining information pertaining to brain lesions and diseases such as mild dementia and Alzheimer's Disease (col. 5 lines 1-10, claims 25, 31). It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Leuchter to modify the teaching by Paulus et al. for the purpose of detecting and analyzing specific neurological disorders such as Alzheimer's Disease.

7. Claims 2, 4, 5, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paulus et al. in view of Carroll et al. and further in view of Wintermark

Art Unit: 3737

et al. Carroll et al. teach the use of a multi-energy CT system to obtain information pertaining to cerebral blood flow, and provide improved contrast, as set forth above, but do not explicitly teach determining blood volume and mean transit time. In a similar field of endeavor, Wintermark et al. disclose a CT based method and apparatus to determine cerebral blood flow, blood volume, and mean transit time (col. 2 lines 4-25, col. 5 lines 13-17). It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Wintermark et al. to modify the teaching by Paulus et al. and Carroll et al. for the purpose of obtaining images with higher accuracy and contrast.

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paulus et al. in view of Carroll et al. in view of Wintermark et al. and further in view of Fessler. Carroll et al. teach the use of the multi-energy CT system to obtain information pertaining to abnormalities in the head and neck region including data to characterize plaque in the carotid arteries (col. 11 lines 48-52) but do not explicitly teach performing a Basis Material Decomposition (BMD) of the acquired data. In the same field of endeavor, Fessler discloses a multi-energy CT system to acquire data, perform a Basis Material Decomposition (BMD) of the acquired data, provide improved CT number accuracy, and facilitate reduction in image artifacts (abstract, col. 3 lines 58-64, col. 4 lines 26-30, col. 7 lines 15-20 lines 66-67, col. 8 lines 1-44, col. 28 lines 13-15). It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Fessler to modify the teaching by Paulus et al., Carroll et al. and Wintermark et al. for the purpose of reducing image artifacts and improving image contrast.

Art Unit: 3737

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paulus et al. in view of Carroll et al. in view of Wintermark et al. and further in view of Leuchter et al. Carroll et al. and Fessler do not explicitly teach monitoring or diagnosing lesions related to Alzheimer's and other neurological disorders. Leuchter et al. disclose a method and apparatus of obtaining information pertaining to brain lesions and diseases such as mild dementia and Alzheimer's Disease (col. 5 lines 1-10, claims 25, 31). It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Leuchter to modify the teaching by Paulus et al., Carroll et al., and Wintermark et al., for the purpose of detecting and analyzing specific neurological disorders such as Alzheimer's Disease.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 3737

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baisakhi Roy whose telephone number is 571-272-7139. The examiner can normally be reached on M-F (7:30 a.m. - 4p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BR

BR

  
ELENI MANTIS-MERCADER  
PRIMARY EXAMINER